

Other hydrophobic carriers are liquid aliphatic or aromatic esters, but for some uses, for example antiperspirant formulations, these should be used as only part of the liquid carrier, desirably not above 20%, and possibly less than 10% by weight of the water-immiscible liquid carrier.

Suitable aliphatic esters contain at least one long chain alkyl group, such as esters derived from C₁ to C₂₀ alkanols esterified with a C₈ to C₂₂ alkanolic acid or C₆ to C₁₀ alkanedioic acid. The alkanol and acid moieties or mixtures thereof are preferably selected such that they each have a melting point of below 20°C. These esters include isopropyl myristate, lauryl myristate, isopropyl palmitate, diisopropyl sebacate and diisopropyl adipate.

Suitable liquid aromatic esters, preferably having a melting point of below 20°C, include fatty alkyl benzoates. Examples of such esters include suitable C₈ to C₁₈ alkyl benzoates or mixtures thereof.

Further instances of suitable hydrophobic carriers comprise liquid aliphatic ethers derived from at least one fatty alcohol, such as myristyl ether derivatives e.g. PPG-3 myristyl ether or lower alkyl ethers of polyglycols, eg C₂-C₄ alkyl PPG ethers such as commercial products having CFTA nominally labelled PPG-14 butyl ether.

Aliphatic alcohols which are solid at 20°C, such as stearyl alcohol are preferably absent or present in low concentration such as less than 5% by weight of the whole

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composition since these lead to visible white deposits when a composition is used.

However, aliphatic alcohols which are liquid at 20°C may be employed. These include branched chain alcohols of at least 10 carbon atoms such as isostearyl alcohol and octyl dodecanol.

Silicon-free liquids can constitute from 0-100% of the water-immiscible liquid carrier. It is preferred that silicone oil and/or a hydrocarbon oil is present and that the total amount of other liquid carriers, preferably, constitutes up to 50 or 60% for example from 0 to 10% OR 10 to 20% by weight of the water-immiscible carrier liquid.

An especially desired combination of water immiscible carrier liquids comprises a mixture of a silicone liquid such as a cyclomethicone and a hydrocarbon liquid, such as in a weight ratio of the former to the latter of from 3:2 to 1:10, optionally in the presence of an emollient water-immiscible liquid.

Emulsion

Many formulations according to the present invention also contain a more polar disperse phase. In such compositions, the invention acylated cellobiose acts as a structurant in the continuous water-immiscible phase. The disperse phase may be a polar liquid alone or conveniently comprise a solution of an active ingredient, such as an antiperspirant salt.

The hydrophilic disperse phase in an emulsion normally comprises water as solvent and can comprise one or more water-soluble or water-miscible liquids in addition to or as a replacement for water. The proportion of hydrophilic carrier fluid, e.g. water, in the disperse phase, in an emulsion according to the present invention is often selected in the range of up to 60%, and particularly from 10% up to 40% or 50% of the whole formulation.

- One class of water-soluble or water-miscible liquids comprises short chain monohydric alcohols, e.g. C_1 to C_4 and especially ethanol or isopropanol, which can impart a deodorising capability to the formulation. A further class of hydrophilic liquids comprises diols or polyols preferably having a melting point of below 40°C , or which are water miscible. Examples of water-soluble or water-miscible liquids with at least one free hydroxyl group include ethylene glycol, 1,2-propylene glycol, 1,3-butylene glycol, hexylene glycol, diethylene glycol, dipropylene glycol, 2-ethoxyethanol, diethylene glycol monomethylether, triethyleneglycol monomethylether and sorbitol. Especially preferred are propylene glycol and glycerol.

- In an emulsion, the disperse phase is likely to constitute from 5 to 80 or 85% of the weight of the composition preferably from 5 to 50 or 65%, more preferably from 25 or 35% up to 50 or 65%, while the continuous phase with the structurant therein provides the balance from 15 or 35% up to 95% of the weight of the composition. Advantages can accrue when the internal phase volume constitutes a minor proportion of emulsion, such as from about 30 to 45% by